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## WORKING THIN COAL SEAMS IN THE DONBASS

V. G. Yatskikh

A number of thin, sloping seams, 0.5-0.6 meter thick, or, in a few instances, less, are being worked in the Donbass. The average length of the mine face, 89 meters, is no greater than before the war. There recently has been an effort to increase the length of the mine face. The present maximum length is 140-150 meters but this does not seem to represent the limit which could be attained.

Cutting thin coal seams is completely mechanized at present and is carried out by the GTK-3M cutting machine or occasionally the KMP-1 machine. Usually the cutting machine's bar is somewhat decreased in length in order to prevent too much coal from being loaded onto the mine face conveyer.

In mining thin seams, 25-40 percent of the mine face output is in the form of coal dust. This fills the working area, interferes with the movement of personnel at the mine face, and impairs ventilation. This dust formerly had to be loaded manually, a labor-consuming operation which retarded the speed of the machine and lowered its productivity.

V. G. Yatskikh, the author of this article, has devised two methods for loading the dust mechanically onto the scraper-conveyer. The first method, intended for seams not thinner than 0.55 meter, calls for the movement of the cutting machine along the frame of the SKT2-6 scraper conveyer. In this case, the loading of coal dust onto the conveyer is completely mechanized with the aid of the cutting chain of the cutting machine. Only a small triangular "zemnik" /heap ?/ with a maximum height of 100 millimeters near the conveyer is left.

The second method is more expedient for cutting seams up to 0.7 meter thick. A GTK-3M or KMP-1 cutting machine is equipped with a Novikov system step-shaped outting bar, with a two-hinged cutting chain instead of the usual flat cutting parathis machine is used in combination with a 90-millimeter-high SKT2-6 scraper, conveyer. This method makes "it possible to cut without leaving a "zeminik" and to load the coal dust directly onto the mine face conveyer by means of the cutting chain.

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At Mine No 3/18 of the Stalinugol' Trust, the Urazovskiy seam, 0.4 meter thick, is being worked with a GTK-3M cutting machine. By cutting along the soft, clayey shale of the floor of the seam, the working area is increased to 0.55 meter. This has resulted in a more effective working of the seam.

Before 1949, coal from thin seams in the Donbass was transported from 51 percent of the mine faces by shaker-conveyer and from 47 percent by scrapers. From the beginning of 1949, mines working thin seams started to employ the new SKT-6 scraper-conveyer, designed by Giprouglemash. At present, improved SKT-6 conveyers have almost entirely replaced scrapers and, to a considerable extent, shaker-conveyers.

Since an SKT-6 scraper-conveyer has replaced a shaker-conveyer in Mine No 46 of the Shakhtantratsit Trust at mine face No 259-bis, the coal output has increased 13 percent and the productivity of the miners 12-15 percent. Similar results were obtained after the introduction of the SKT-6 into the mines imeni "Proletarskaya Diktatura", of the Shakhtantratsit Trust, No 6-14 and No 1 of the Krasnogvardeyskugol' Trust, and a number of others.

However, the SKT-6 scraper is not without defects. It is unable to transfer coal from one conveyer to another at long mine faces where two conveyers are used. Its drive (privod) is very high (460 millimeters), which frequently makes it necessary to blast the roof of the seam. Its sections are still too heavy (60 kilograms).

A new coal combine for thin seams should be designed. It should use as its base the new, greatly improved GTK-35 heavy cutting machine, which is not more than 0.3 meter high, instead of the already outmoded GTK-3M.

Some coal combines have already been designed for thin seams. The UKMG-1 combine, designed by DONUGI in collaboration with the Gorlovka Plant imeni Kirov, is a low cutting machine with a lower steplike bar and an upper flat bar which operates in such a way as to extract almost completely a 0.4 to 0.6-meter coal seam. An experimental model is being prepared at present at the Gorlovka Plant.

The UKT-1 combine, designed and constructed by Giprouglemash, is being tested in Mine No 19 of the Rutchenkovugol' Trust in the "Proskoveyevskiy" seam which is 0.5 meter thick. This combine removes the coal and loads it onto an SKT2-6 mine face conveyer with the aid of a ring-shaped bar and several boring bits located inside the bar. A combine proposed by D. P. Lyapin and V. K. Golyak includes a scraper-conveyer to transport the coal to the mine face conveyer. The UKMG-1 and the UKT-1 do not include conveyers.

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